DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 13.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-007756
Date Inspected: 15-Jul-2009

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Oregon Iron Works Clackamas, Or.

OSM Arrival Time: 700
OSM Departure Time: 1530
Location: Clackamas, OR

CWI Name:	Mike Gregson, Jose Salazar	**CWI Present:**	☑ Yes ☐ No
Inspected CWI report:	☐ Yes ☑ No ☐ N/A	**Rod Oven in Use:**	☐ Yes ☐ No ☑ N/A
Electrode to specification:	☑ Yes ☐ No ☐ N/A	**Weld Procedures Followed:**	☑ Yes ☐ No ☐ N/A
Qualified Welders:	☑ Yes ☐ No ☐ N/A	**Verified Joint Fit-up:**	☑ Yes ☐ No ☐ N/A
Approved Drawings:	☑ Yes ☐ No ☐ N/A	**Approved WPS:**	☑ Yes ☐ No ☐ N/A
		Delayed / Cancelled:	☐ Yes ☑ No ☐ N/A

Bridge No: 34-0006
Component: Hinge K Pipe Beams

Summary of Items Observed:

The Quality Assurance Inspector Sean Vance arrived on site at Oregon Iron Works, Inc (OIW) in Clackamas, OR, to randomly observe the in process welding of the Hinge K Pipe Beam assemblies. The QA Inspector arrived on site to randomly observe the OIW Quality Control (QC) Inspectors in process and completed visual and nondestructive testing. Upon the arrival of the QA Inspector the following observations were made:

OIW Fabrication Shop-Bay 3
Hinge-K Pipe Beam Assembly 102A-1: 7/15/09
a111-1 Forging to a110-1 Base Plate
QA Inspector noticed that all stiffener plates were tack welded and this assembly 102A-1 was sitting idle, pending transfer to the welding positioner for submerged arc welding on these PJP and fillet welds.

Hinge-K Pipe Beam Assembly 102A-2: 7/15/09
a111-2 Forging to a110-2 Base Plate
QA Inspector noticed this assembly 102A-2 was sitting idle, pending the FCAW tack welding of the PJP and fillet weld stiffeners, to base plate (a110-2) and forging (a111-2).

Hinge-K Pipe Beam Assembly 102A-3: 7/15/09
a111-3 Forging to a110-3 Base Plate
QA Inspector noticed this assembly 102A-3 was sitting idle, with a pending non-critical weld repair.

Hinge-K Pipe Beam Assembly 102A-4: 7/15/09
a111-4 Forging to a110-4 Base Plate
QA Inspector noticed this assembly 102A-4 had been previously placed in position and welder #J6, Mr. Craig Jacobson, was in process of performing submerged arc welding on the multi pass 25mm fillet weld on the a107 stiffener plate to ab106 stiffener plate, designated as weld joint # W1-80, in the flat position. QA verified Mr. Jacobson was currently qualified for this process/position and noted that Mr. Jacobson was utilizing OIW approved welding procedure specification (WPS 4020). QA Inspector randomly recorded pre-heat temperatures of approximately 350 degrees Fahrenheit and noticed QC Inspector Jose Salazar was present to monitor in-process welding parameters (amps/volts). QA Inspector noted that Mr. Salazar had previously recorded in-process welding parameters of 360 amps and 27.8 volts, which appears to be in compliance with the applicable welding procedure specification.

Hinge-K Pipe Beam Fuse Assembly 120A-7: 7/15/09
a124-5 Half Fuse to a124-15 Half Fuse
QA Inspector noticed the submerged arc welding (SAW) on CJP (AWS D1.5 B-U3c-S), half fuse pipe assembly, (piece mark identified as a124-5), to half fuse pipe assembly, (piece mark identified as a124-15), had been completed on this date and was sitting idle. QA Inspector noted that 100% final ultrasonic weld inspection would be performed by OIW QC Inspectors on this CJP weld joint after the required 72hrs. cooling time, per AWS D1.5. See atached picture below.

Hinge-K Pipe Beam Fuse Assembly 120A-8: 7/15/09
a124-8 Half Fuse to a124-16 Half Fuse
QA Inspector noticed that the half fuse sub-assemblies, identified as piece marks a124-8 & a124-16, had been previously fit up and tack-welded by OIW production personell. QA Inspector noted that the weld joint was a CJP AWS D1.5 B-U3c-S and the welding procedure specification (WPS 4020) would be utilized during the FCAW/SAW process in accordance with AWS D1.5 and approved OIW contract requirements. QA Inspector noticed that QC Inspector Mike Gregson and Jose Salazar were present, on this date, to verify weld joint fit-up and monitor in-process welding parameters (amps/volts) and continuous pre-heat temperatures.

OIW Fabrication Shop-Bay 6 (ESW Overlay Process)
Hinge-K Pipe Beam Fuse Assembly 120A-1: 7/15/09
a124-6 Half Fuse to a124-7 Half Fuse
QA Inspector noticed that the first ESW stainless steel overlay passes were in-process, on this fuse assembly 120A-1. QA Inspector witnessed welder #F17, Mr. Igor Frolov performing electro slag welding (ESW) on the first layer welding passes, (seven weld passes at this time), in the flat position, utilizing Soudokay brand Soudotape 309L stainless steel consumable strip. QA Inspector noted the first layer passes would be completed utilizing the 309L consumable strip and the remaining second & third layer passes would be completed utilizing Soudokay brand Soudotape 316L stainless steel consumable strip, per contract requirements. QA Inspector randomly noticed QC Inspector’s Mike Gregson and Jose Salazar were present, to verify in-process welding parameters (amps/volts) and monitor in-process continuous pre-heat temperatures. QA Inspector spoke with QC Inspector Jose Salazar and Mr. Salazar explained that welding amps were recorded as 1220 amps/25.2 volts, travel speed at 271mm/min. and a pre-heat temperature recorded at 225 Fahrenheit. QA Inspector verified Mr. Igor Frolov was currently qualified for this welding process/position and randomly recorded pre-heat temperatures of approximately 225 Fahrenheit.

QA Inspector noted that Mr. Igor Frolov appeared to be in compliance with the applicable approved welding procedure specification (WPS 7003). See attached picture below.

Hinge-K Pipe Beam Fuse Assembly 120A-2: 7/15/09
a124-3 Half Fuse to a124-11 Half Fuse
QA Inspector noticed this fuse assembly 120A-2 was sitting idle, pending 100% final magnetic particle testing on the exterior machined surface by qualified OIW QC personnel. QA Inspector previously spoke with QC Inspector Mike Gregson and Mr. Gregson explained that the exterior magnetic particle testing would be performed as soon as OIW production personnel place this assembly on the automated rollers. Mr. Gregson also explained that once the magnetic particle testing was complete, QA Inspector would be notified and QA Inspector will then perform approximately 10% magnetic particle testing, on the exterior machined surface, of this fuse assembly 120A-2.

Hinge-K Pipe Beam Fuse Assembly 120A-3: 7/15/09
a124-12 Half Fuse to a124-10 Half Fuse
QA Inspector noticed that the stainless steel overlay welding (ESW) was previously completed on this fuse assembly 120A-3 and was sitting idle, pending transport to AG Machining for final machining.

Hinge-K Pipe Beam Fuse Assembly 120A-4: 7/15/09
a124-13 Half Fuse to a124-4 Half Fuse
QA Inspector noticed that the stainless steel overlay welding (ESW) was previously completed on this fuse assembly 120A-4 and was sitting idle, pending transport to AG Machining for final machining.

Hinge-K Pipe Beam Fuse Assembly 120A-5: 7/15/09
a124-2 Half Fuse to a124-14 Half Fuse
QA Inspector noticed this fuse assembly 120A-5 was sitting idle, pending the ESW overlay process.

Hinge-K Pipe Beam Fuse Assembly 120A-6: 7/15/09
a124-1 Half Fuse to a124-9 Half Fuse
QA Inspector noticed this fuse assembly 120A-6 was sitting idle, pending the ESW overlay process.

Material, Equipment, and Labor Tracking
QA Inspector Sean Vance performed a verification of material, personnel and equipment involved with the project. The QA Inspector observed at Oregon Iron Works: 6 OIW production personnel and 2 QC Inspectors

WELDING INSPECTION REPORT

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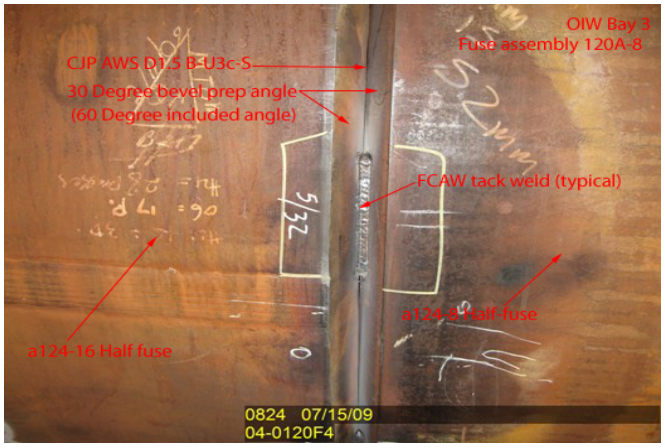

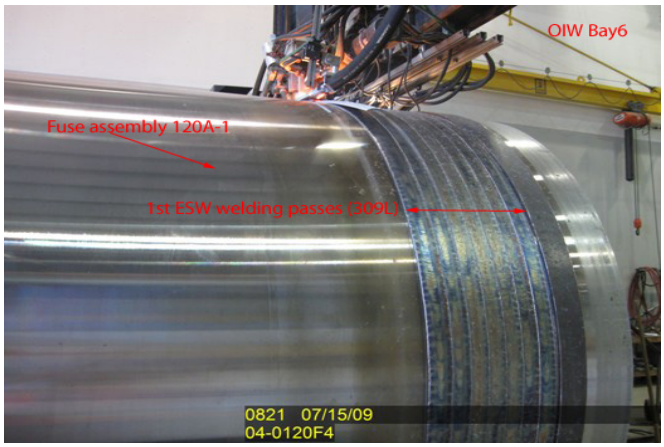

Summary of Conversations:

As noted above.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Mohammad Fatemi (916) 813-3677, who represents the Office of Structural Materials for your project.

Inspected By:	Vance,Sean	Quality Assurance Inspector
Reviewed By:	Adame,Joe	QA Reviewer